WHAT IS CLAIMED IS:

1. A method for flow control over channel-based switched fabric connections between a first side and a second side comprising:

storing at least one posted receive buffer in a receive buffer queue at a first side of a channel-based switched fabric connection;

incrementing a number of credits based on the at least one posted receive buffer;

notifying a second side of a channel-based switched fabric connection of the number of credits;

incrementing a number of send credits at the second side based on the number of credits; and

sending a message from the second side to the first side if at least one of the number of send credits is larger than or equal to two, and the number of send credits is equal to one and a second number of credits is larger than or equal to one, the second number of credits being based on at least one second posted receive buffer at the second side.

2. The method according to claim 1, wherein the notifying comprises sending the number of credits as part of a second message from the first side to the second side.

3. The method according to claim 2, wherein the second message is a normal message and the number of credits comprises an immediate data portion of the normal message.

4. The method according to claim 2, wherein the second message is a zero byte message that transfers the number of credits from the first side to the second side.

1　　　　5. The method according to claim 1, comprising sending the message from a queue

2　　　of stored messages on the second side.

1　　　　6. The method according to claim 1, comprising setting the number of credits to zero

2　　　after the notifying.

1　　　　7. The method according to claim 1, comprising incrementing a number of remote

2　　　credits at the first side after the notifying, the number of remote credits being equal to the

3　　　number of send credits at the second side.

1　　　　8. The method according to claim 7, comprising sending a zero byte message that

2　　　transfers the number of credits from the first side to the second side when the number of

3　　　remote credits falls below a threshold value.

1　　　　9. The method according to claim 8, wherein the threshold value is changeable.

1　　　　10. The method according to claim 1, wherein the at least one posted receive buffer

2　　　is posted by at least one of an application, a device driver and a processor at the first side

3　　　before the storing.

1　　　　11. The method according to claim 10, comprising locking out at least one of an

2　　　application, a device driver, and a processor at the first side from accessing the receive

3　　　buffer queue after the posting and before the storing.

1   12. The method according to claim 1, comprising storing the message in a message

2   queue before the sending.

1   13. The method according claim 1, comprising originating the message from at least

2   one of an application, a device driver, and a processor at the second side before the

3   sending.

1   14. The method according claim 13, comprising storing the message in a message

2   queue at the second side after the originating and before the sending.

1   15. The method according to claim 14, comprising locking out all other at least one

2   of an application, a device driver, and a processor at the second side from accessing the

3   message queue after the originating and before the storing.

1   16. The method according to claim 14, comprising sending the message in the order

2   that it was stored in the message queue.

1   17. A system for flow control over channel-based switched fabric connections

2   comprising:

3   a first unit, the first unit storing at least one posted receive buffer;

4   a first counting device, the first counting device incrementing a number of credits at

5   the first unit based on the at least one posted receive buffer;

6   a second unit, the second unit being connectable to the first unit over a channel-based

7   switched fabric;

8   a second counting device, the second counting device incrementing a number of send

9   credits at the second unit based on the number of credits; and

10   control logic, the control logic determining if one of the number of send credits is

11   larger than or equal to two, and the number of send credits is equal to one and a second

12   number of credits is larger than or equal to one, the second number of credits being based

13   on at least one second posted receive buffer at the second unit, the second unit being

14   allowed to send a message to the first unit based on the control logic determining.

1   18. The system according to claim 17, comprising a receive buffer queue, the first

2   unit storing the at least one posted receive buffer in the receive buffer queue.

1   19. The system according to claim 17, comprising a send buffer queue, the send

2   buffer storing messages to be sent from the second unit to the first unit.

1   20. The system according to claim 17, the send buffer queue comprising a first in-

2   first out (FIFO) storage device.

1   21. The system according to claim 17, comprising a processor, the processor

2   initiating the message at the second unit.

1   22. The system according to claim 17, comprising a processor, the processor posting

2   the at least one posted receive buffer at the first unit.

1   23. The system according to claim 17, comprising a device driver, the device driver

2   initiating the message at the second unit.

1   24. The system according to claim 17, comprising a device driver, the device driver

2   posting the at least one posted receive buffer at the first unit.

1   25. A flow control program, in a tangible medium, when executed that causes a

2   processor-based system to perform:

3   storing at least one posted receive buffer in a receive buffer queue at a first side of a

4   channel-based switched fabric connection;

5   incrementing a number of credits based on the at least one posted receive buffer;

6   notifying a second side of a channel-based switched fabric connection of the number

7   of credits;

8   incrementing a number of send credits at the second side based on the number of

9   credits; and

10   sending a message from the second side to the first side if one of the number of send

11   credits is larger than or equal to two, and the number of send credits is equal to one and

12   a second number of credits is larger than or equal to one, the second number of credits

being based on at least one second posted receive buffer at the second side.

1   26. The flow control program according to claim 25, wherein the notifying comprises

2   sending the number of credits as part of a second message from the first side to the

3   second side.

1   27. The flow control program according to claim 25, comprising setting the number

2   of credits to zero after the notifying.

1   28. The flow control program according to claim 25, comprising incrementing a

2   number of remote credits at the first side after the notifying, the number of remote credits

3   being equal to the number of send credits at the second side.

1   29. The flow control program according to claim 25, wherein the at least one posted

2   receive buffer is posted by at least one of an application, a device driver and a processor

3   at the first side before the storing.

1   30. The flow control program according to claim 25, comprising locking out all other

2   at least one of an application, a device driver, and a processor at the first side from

3   accessing the receive buffer queue after the posting and before the storing.